



## The Impact of Wildfires

Climate change is increasing the frequency, intensity, and burn areas of wildfires.

In California, the wildfire peril has been exacerbated by the ongoing expansion of residential property development into the Wildland-Urban Interface and the seasonal dry and windy offshore wind events known locally as Diablo or Santa Ana winds. The resulting wildfires have become exceptionally large, dangerous, and costly in terms of lost lives, devastated property, and environmental damage. Cascading effects—such as “de-energizing,” the temporary shutdowns of the electrical grid for public safety reasons—impact economies and disrupt critical services and daily lives across the state.

But larger and more ferocious wildfires are a global phenomenon. Higher spring and summer temperatures, an elongated dry season, drought, tree mortality, and other factors have made wildfires a constant threat in other regions with Mediterranean climates, such as the Iberian Peninsula, and a growing menace in geographies where historically wetter climates are experiencing hotter, drier summers.

## Jupiter FireScore™

Jupiter FireScore™ combines state-of-the-art science from fire behavior, weather, and climate modeling to produce a best-in-class decision support system from high-resolution wildfire risk estimates in real-time for emergency operations support, and 50 years into the future for planning applications.



## Key Features

- **Projects fire probabilities** based on numerical weather simulations, fully capturing the non-linear interaction of topography and the atmosphere that produce local corridors of high wildfire risk
- **Offers operational real-time fire spread modeling** with high temporal and spatial resolution outputs to support emergency response
- **Analyzes high-resolution numerical weather simulations** driven by downscaled climate models, informing long-term fire prevention and planning efforts
- **Reflects future drought and aridity conditions** under various climate change scenarios
- **Enables examination of fire risk** across large areas

## Geographies

- California
- Western USA
- Australia
- Southern Europe

## Use Cases

**Jupiter FireScore Operations** is a real-time tool for utilities and telecommunications companies, federal, state, and local firefighting, public safety, emergency services, first responder and regulatory agencies. It offers forecast horizons ranging from a few hours to five days. Applications include:

- Emergency operations and evacuation planning
- Grid de-energization
- Firefighting safety and strategy
- Staffing optimization
- Advance positioning of resources
- Monitoring and predicting fire growth with continuously updated simulations

**Jupiter FireScore Planning** produces high-resolution wildfire risk models extending 50 years into the future for developing resiliency plans for critical infrastructure impacting public safety, utilities, transport, Department of Defense, and other organizations, as well as asset portfolio risk management for financial services companies. Insights from FireScore Planning can help local and regional governments improve zoning and land-use decision-making. Applications include:

## Utilities

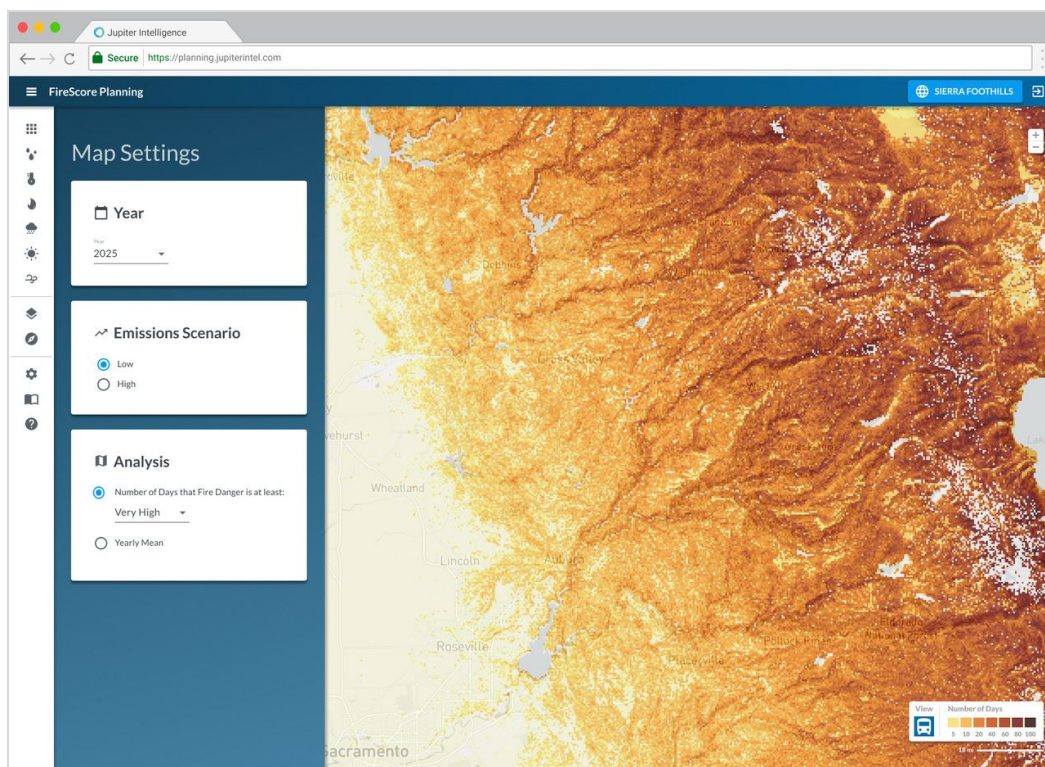
- Quantify medium and long-term wildfire risk
- Inform strategic capital and asset planning (such as new development or grid sectionalization)
- Vegetation management
- Prescribed burn and fuel break designs
- Infrastructure and equipment hardening/upgrades
- Obtain necessary data for regulatory engagement and rate-case development

## Asset Portfolio Risk Management

- Projecting residential/commercial property loss
- Setting underwriting guidelines and making better risk selection
- Understanding the safety of a mortgage asset over the expected life-cycle of mortgage
- Strategic planning for portfolio management, underwriting, and risk engineering

## Jupiter ClimateScore™ Intelligence Platform

FireScore is built on top of the cloud-based Jupiter ClimateScore™ Intelligence Platform. Based on the latest global atmospheric science, ClimateScore is designed specifically for the rigors of dynamic climate and weather analysis and prediction. Its physics-based and artificial intelligence models are continuously fine-tuned using petabytes of constantly refreshed data from millions of ground-based and orbital sensors. Novel machine learning techniques reduce local biases of scientific simulations and continually improve the accuracy of results as new observations become available. Jupiter HeatScore,™ WindScore,™ and FloodScore™ services are also based on the ClimateScore platform.



Simulated FireScore risk in Central Sierra Nevada in 2025 following low emissions scenario